

Power Quality Improvements Benefit the Food Processing Industry

The vacuum cleaner is turned on.

The lights in the house go dim.

Undoubtedly, we have all experienced the dimming of lights at our home when starting up a major appliance. Aside from the surprise, there are certainly no lingering effects.

Just another example of poor power quality. No harm. No foul.

Unless you operate a large factory.

A minor inconvenience to most residents is a difficult challenge for the food processing industry.

With the automation of food processing plants, entire operations come to an immediate halt due to slight interruptions of service.

As an example, if cooking elements at a food processing plant go down, the food in process becomes contaminated, the

machines must be cleaned off and the process restarted in order to continue production, all at a considerable cost.

peak period for food manufacturing due to the harvest season.

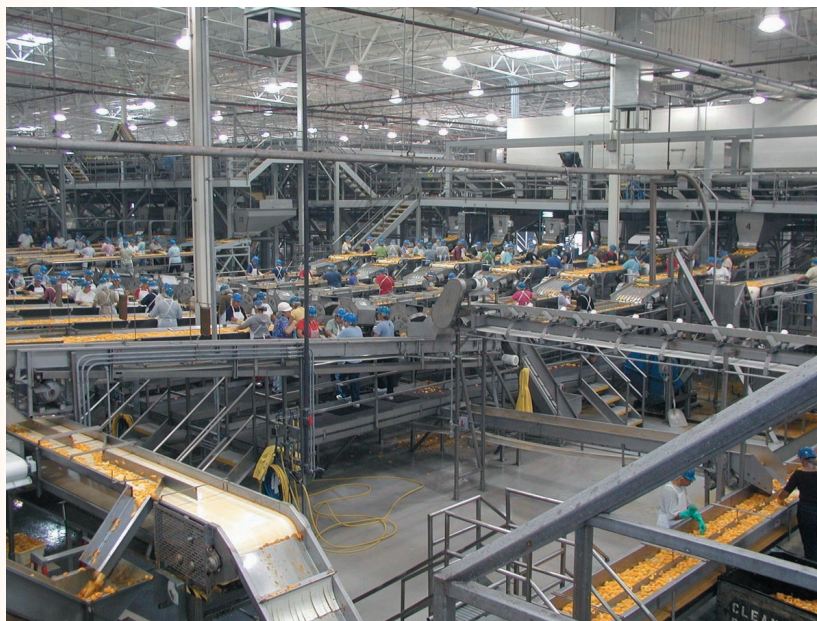
A more efficient energy source for the food processing industry means improved profits, lower energy costs and a reduction in energy demand for the State of California.

The Weakest Link

Like any system, from computers, machinery, automobiles, etc., one must first find the weak spots. Like anything, there are places in systems that are the most vulnerable to electric power quality disturbances.

The Del Monte plant in Modesto, California was researched as a representative industrial site by the state's Public Interest Energy Research (PIER) Program.

In-line monitoring systems were installed to collect real time performance data from plant equipment while the food production was in-process. Using this monitored data, problem areas were discovered and solutions were researched, tested and developed.



This Del Monte plant in Modesto uses PIER-funded methodology to identify and reduce power supply interruptions and related power quality problems.

With equipment that must run precisely, the slightest interruption of power can break down the entire system and bring activity in the plant to a standstill.

California businesses lose billions each year due to the phenomenon. Complicating the issue is the fact that California energy supplies are stretched to their limit during the summer months, the

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The solution: electronic “pacemakers.”

Although these specialized units are not officially called “pacemakers,” they serve the same purpose to the food processing plant as a pacemaker serves to a heart patient.

When the power quality is diminished, the units supply the operating equipment additional energy during the brief interruption, ensuring the overall system does not miss a beat. The units are used in the most sensitive areas in the plant’s operation.

The benefits to the operating company and to the State of California are great.

Benefits To California

Food processing means jobs for the people of California, which is responsible for:

- 45% of the world supply of processed tomato products
- 100% of the U.S. supply of canned peaches and fruit cocktail
- 100% of the U.S. supply of black ripe olives.

Neighboring states, eager to diversify their own tax structure and economy,



would like nothing more than to lure companies like those in the food processing industry to their state.

By providing the industry the tools and information to better run their operation, the Energy Commission’s PIER Program is helping make the food processing industry competitive in the global marketplace.

In addition, by researching a variety of solutions, companies such as Del Monte are assured that the energy solutions they are using have been independently tested and that those solutions will deliver the promised results.

The solutions found in this project are also applicable for other manufacturing industries, and will help lead to new standards in the manufacturing of automated equipment.

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